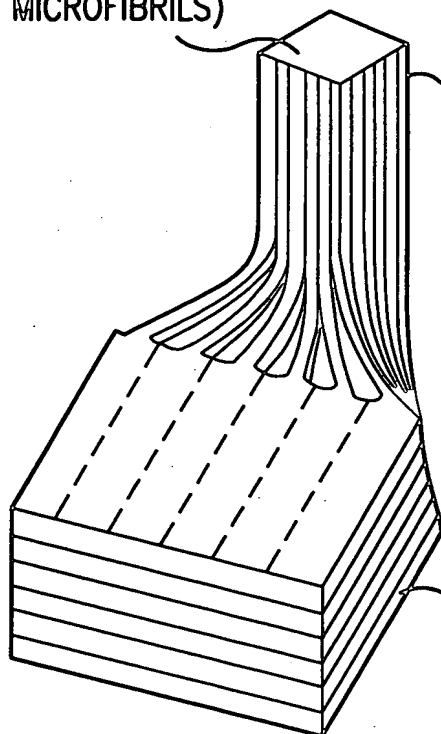


FIBRIL (BUNDLE
OF MICROFIBRILS)

CRYSTALLINE
BLOCKS

GROUP OF
LAMELLAE



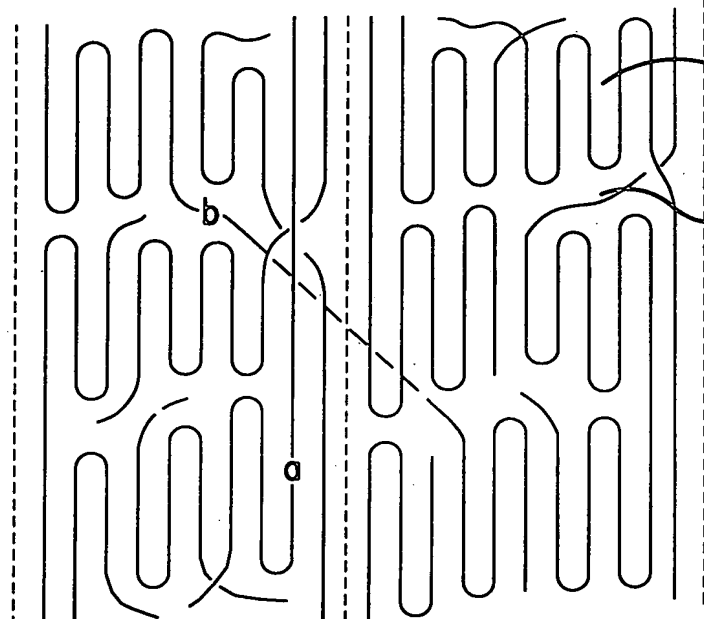
TRANSFORMATION OF LAMELLAR STRUCTURE TO FIBRILLAR STRUCTURE

FIG.1

MICROFIBRILS

CRYSTALLINE
BLOCK

AMORPHOUS
REGION

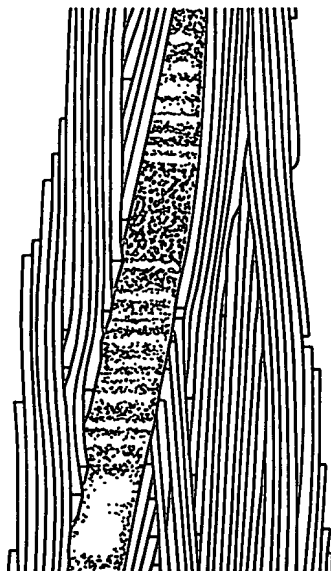


a = INTRAFIBRILLAR
TIE-MOLECULE

b = INTERFIBRILLAR
TIE-MOLECULE

FIG.2

FIBRILS



1 μ

FIG.3

DRAW DIRECTION

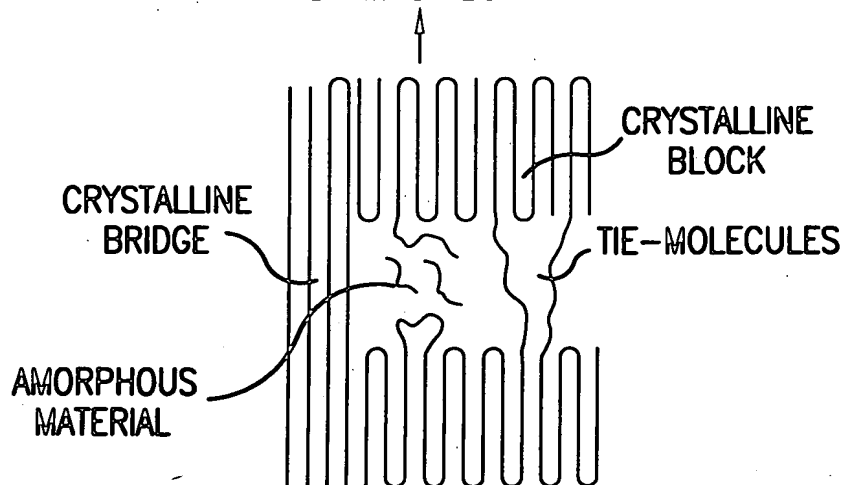


FIG.4

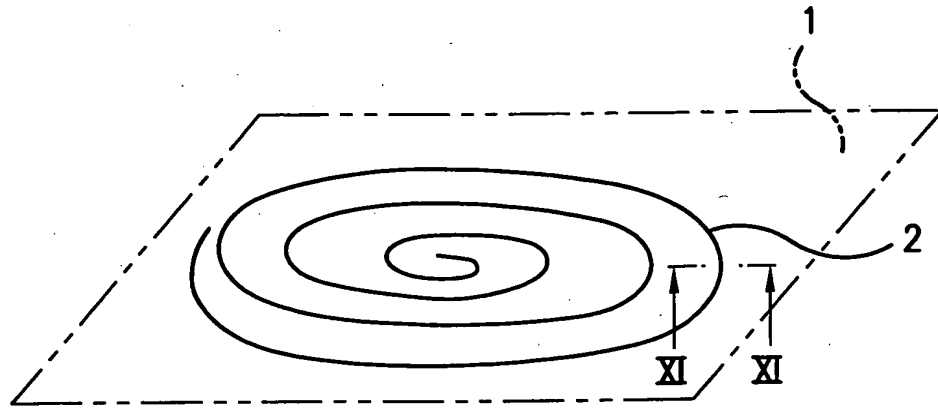


FIG. 5

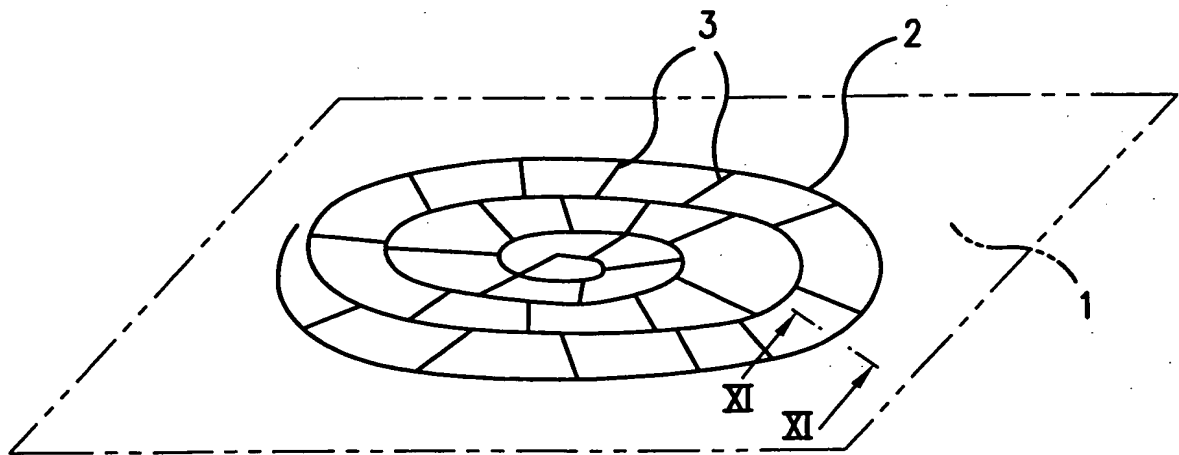


FIG. 6

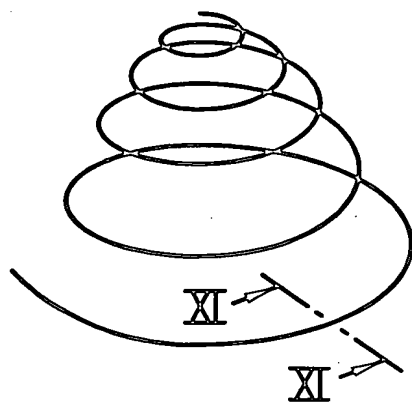


FIG. 7a

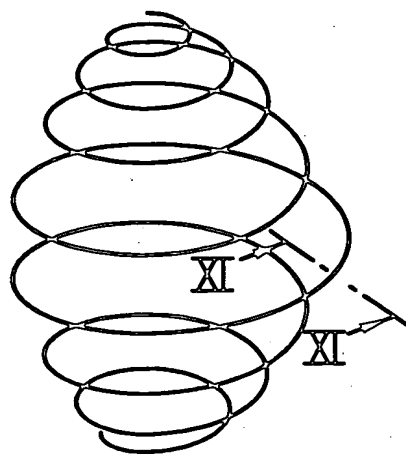


FIG. 8a

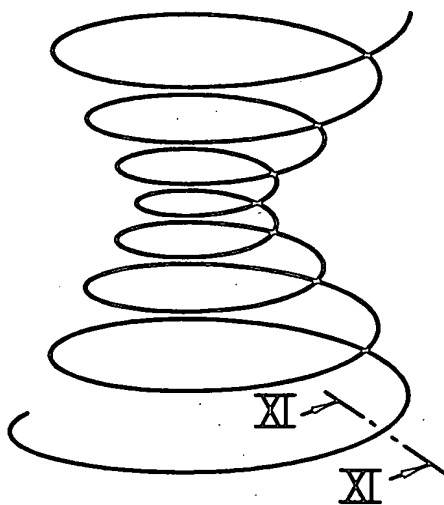


FIG. 9a

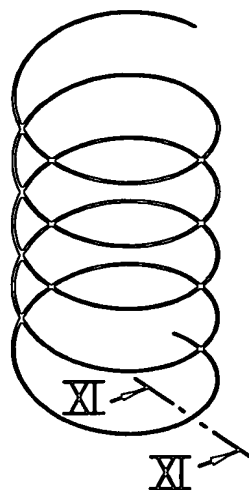


FIG. 10a

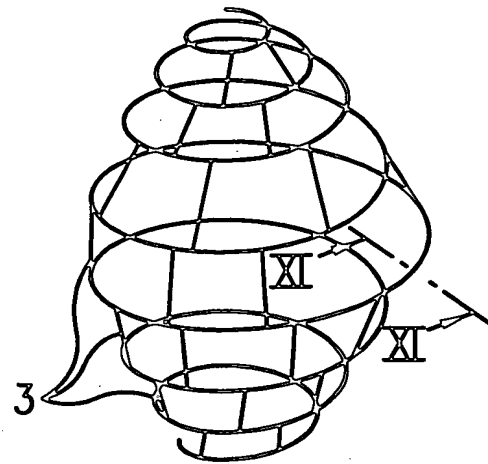


FIG. 8b

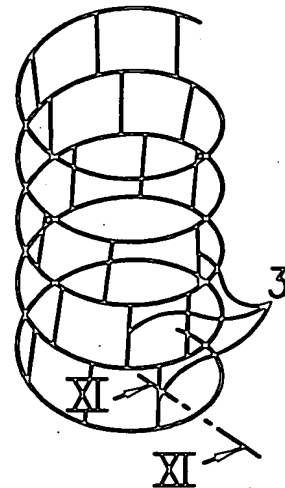


FIG. 10b

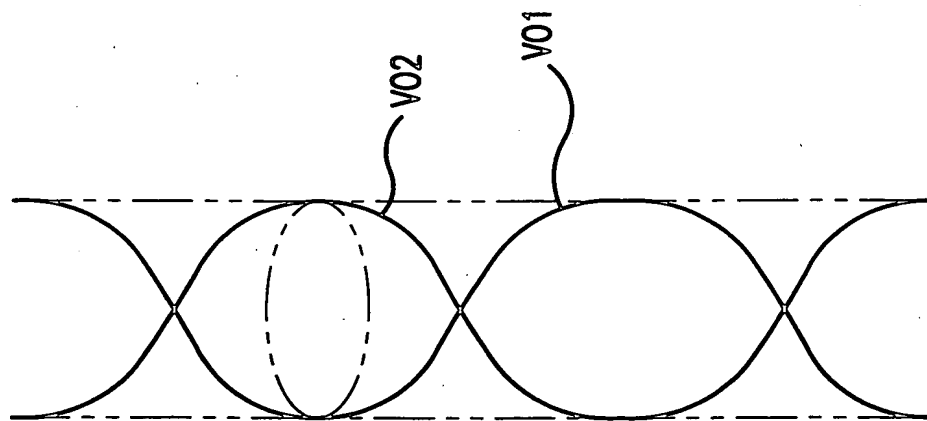


FIG. 10

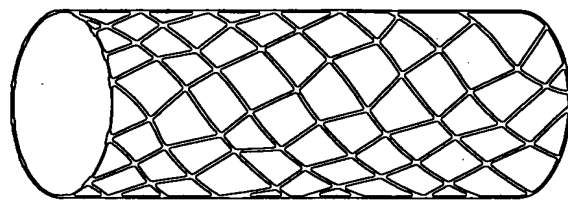


FIG. 10.

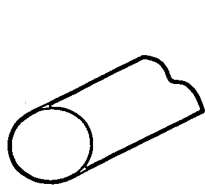


FIG. 11a

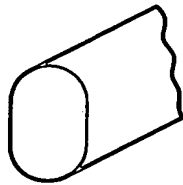


FIG. 11b

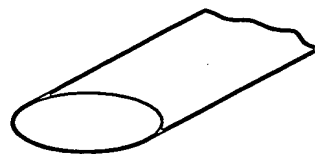


FIG. 11c

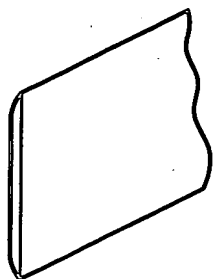


FIG. 11d



FIG. 11e

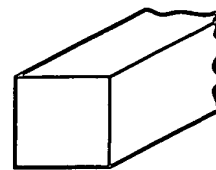


FIG. 11f

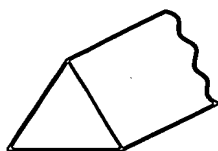


FIG. 11g

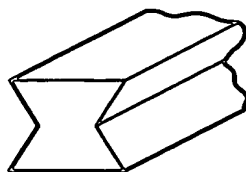


FIG. 11h

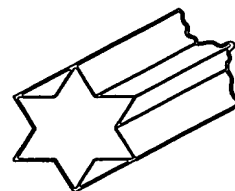


FIG. 11i

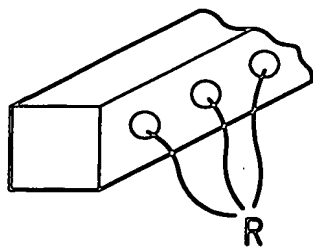


FIG. 11j

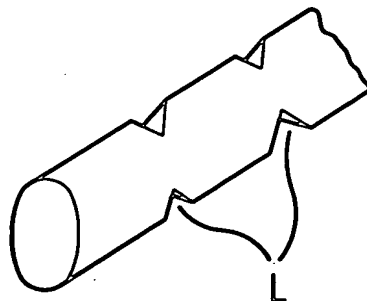


FIG. 11k

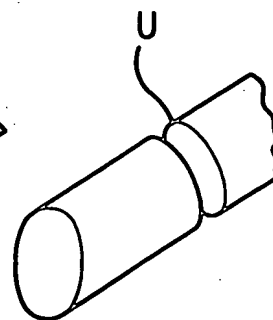
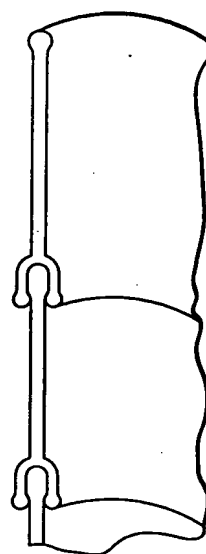


FIG. 11l



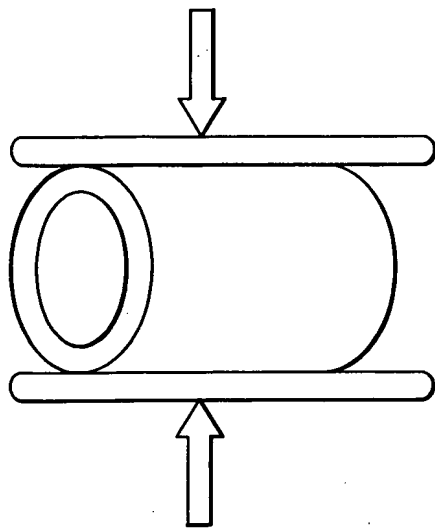


FIG.14a

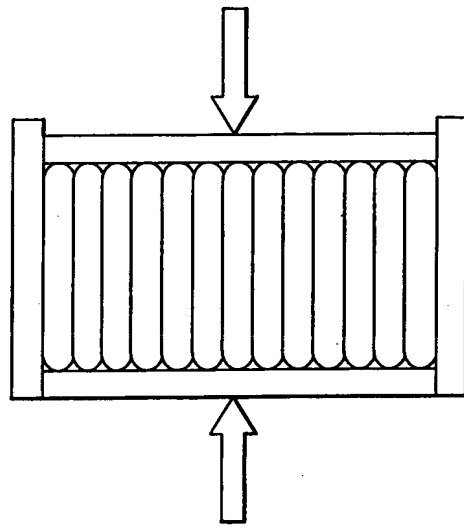


FIG.14b

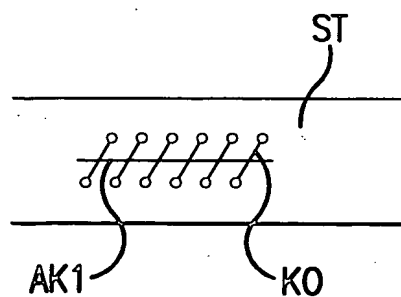


FIG. 15a

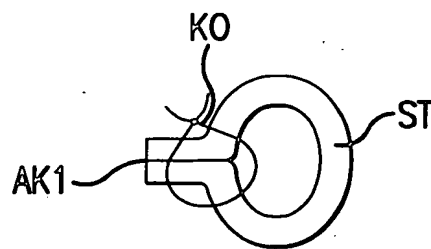


FIG. 15b

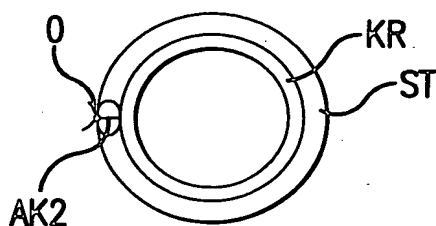


FIG. 15c

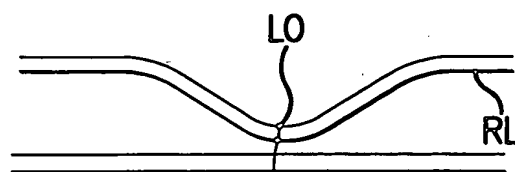


FIG. 16a

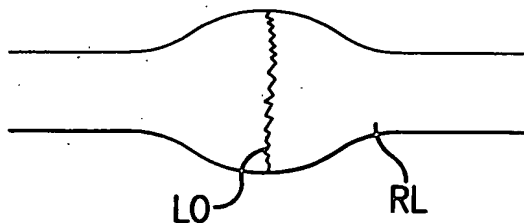


FIG. 16b

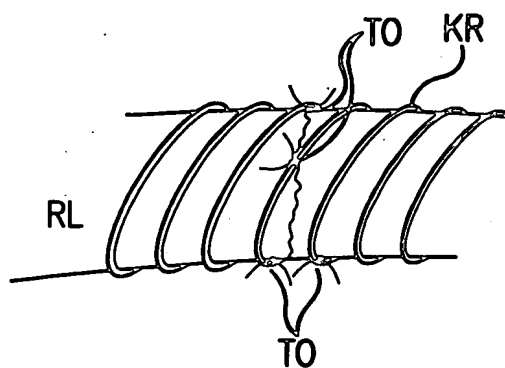


FIG. 16c



FIG. 17

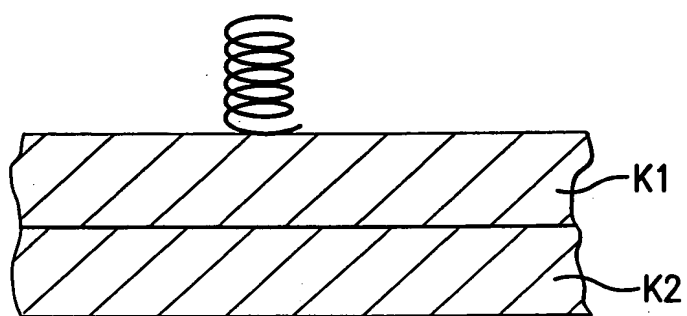


FIG.18a

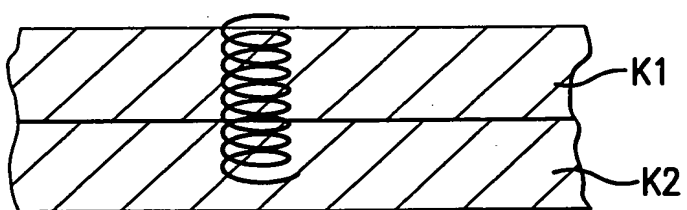


FIG.18b